

REMARKS

In accordance with the foregoing, claims 31 and 32 have been cancelled and 1, 18 and 33-36 have been amended. Claim 37 has been added. Claims 1-12, 14, 18-30 and 33-36 are pending and consideration.

To address the rejections under 35 USC §§ 101 and 112, Applicants made claim amendments, which we believe the Examiner will find to be substantially self-explanatory. The Examiner's careful review is appreciated.

Claims 31 and 32 are separately rejected under 35 USC § 102(e). These claims have been cancelled.

Claims 33 is rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 6,151,160 to Ma et al. Claims 33 has been amended to recite a Raman amplification unit provided in series with the optical amplification unit and the at least one parallel amplifying unit, to produce Raman amplification for the optical signals in the L-band with the residual excitation light. It is believed that this limitation, taken together with the rest of the claim, patentably distinguishes over the reference.

With regard to claims 34 and 35, these claims have been revised to improve accuracy, while maintaining allowable subject matter. These claims include the features of first and second optical amplifiers and a pre-stage Raman amplifier/amplification unit.

With regard to new independent claim 37, this claim recites that excitation light passes through one of the optical amplifiers and the demultiplexer and provides Raman amplification on a pre-stage of the demultiplexer. Although claim 37 is certainly not restricted to what is shown in the drawings and described in the specification, the Examiner is referred to Fig. 1. Fig. 1 shows a WDM demultiplexer. At the C-band output from the demultiplexer 1, the signal characteristics may appear as shown in the solid line in attached Fig. A. The signal characteristics of the output on the L-band side of the demultiplexer are shown with a dotted line. As can be seen, for the C-band side, the L-band signals are minimized, and for the L-band side, the C-band signals are minimized. The excitation light for the C- and L-band amplifiers is shown by the arrow.

It should be apparent that the excitation light is on the C-band side of the spectrum. Accordingly, in the reversed direction, the excitation light is able to travel from the C-band side of the demultiplexer to the transmission side (multiplexed input) of the demultiplexer. However, the excitation light does not appreciably travel from the L-band side to the transmission side.

It is also possible that a WDM demultiplexer (a WDM coupler) could have the

transmission characteristics shown in attached Fig. B. In Fig. B, a solid line represents the transmission characteristics on the C-band amplifier side of the demultiplexer. A dotted line represents the transmission characteristics on the L-band amplifier side of the WDM coupler. The excitation light for the C-band and the L-band amplifier is shown by the arrow. With the transmission characteristics shown in Fig. B., the C-band is eliminated from the L-band amplifier side of the WDM coupler. Wavelengths above and below the C-band are permitted to travel through the L-band side of the WDM coupler. Thus, the excitation is permitted to travel through the L-band side of the WDM coupler.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8(a)
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 22, 2004
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Date: 3-22-04